

## **Records of *Cryptophagus* Herbst, 1792 from the Himalaya, with a new species from Thailand (Coleoptera: Cryptophagidae)**

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**Records of *Cryptophagus* Herbst, 1792 from the Himalaya, with a new species from Thailand (Coleoptera: Cryptophagidae).** - Records of *Cryptophagus* Herbst from the Himalaya are given, including types seen. A new species, *C. reboredae* sp. n., is described and figured from Thailand.

**Key - words:** Coleoptera - Cryptophagidae - *Cryptophagus* - records - new species - Himalaya - Thailand.

### INTRODUCTION

The Indian and especially Himalayan Cryptophagidae have recently been studied by Lyubarsky (1997, 1999). In spite of this, the fauna of the Himalaya and Oriental region is still insufficiently known, despite numerous new species having been described from there in the past (Bruce, 1945, 1952; Johnson, 1970, 1971, 1975; Lyubarsky, 1998, 1999; Sen Gupta, 1978, 1980; Sen Gupta & Basak, 1985; Sen Gupta & Pal, 1980). The object of this work is to contribute to the knowledge of *Cryptophagus* in the Himalaya and Oriental region, based on the abundant material lent to me by Dr I. Löbl. Most of the material studied was collected by sifting forest litter and was extracted from samples by means of the "Winkler-Moczarski" apparatus (Löbl, 1992).

Acronyms are used to indicate the source of material studied as follows: BMNH - British Museum (Natural History); IRSN - Institut Royal des Sciences Naturelles de Belgique; MNHN - Muséum National d'Histoire Naturelle, Paris; SMNH - Swedish Museum of Natural History.

### MATERIAL AND METHODS

Terminology and measurements of the new species follow an earlier paper (Otero, 1997), except for the eccentricity of the eyes (E), which is as follows:  $E = \text{width} / \frac{1}{2} \text{ of the length}$ ; width is measured across the widest part of a line joining the anterior and posterior limit of the eye; length is the maximum length of the eye. Generally, L is used for length, W is width, Ø is diameter. All structures were measured using an Olympus SZX12 stereomicroscope equipped with an image analysis system (Micro Image Version 4.0 for Windows).

## MATERIAL EXAMINED

*Cryptophagus atratus* Champion, 1922

Holotype (female): India, Kumaon (coll. BMNH).

INDIA. Uttar Pradesh, Garhwal, 1900 m, 18.III.78, 1 ex; 23.X.79, 1 ex; 26.X.79, 1 ex; 28.X.79, 1 ex. (leg. C. Besuchet- I. Löbl). NEPAL. Bagmati, above Shermathan, 2900 m, 6.IV.81, 1 ex; 26.IV.81, 1 ex; Lalitpur, Phulcoki, 2700 m, 16.X.83, 35 ex (leg. A. Smetana- I. Löbl).

Distribution: Northern India and Nepal (Lyubarsky, 1999).

*Cryptophagus aurovestitus* Bruce, 1945

Holotype (female): N.E. Burma, Kambaiti, 8.IV.1934 (leg. Malaise) (coll. SMNH).

NEPAL. Patan, Phulcoki, 2500 m, 28-29.IV.84, 1 ex; Bagmati, below Thare Pati, 3300 m, 10.IV.81, 3 ex; 11.IV.81, 1 ex; Bagmati prov., Mere Dara, 3200 m, 8.IV.81, 1 ex (I. Löbl- A. Smetana).

Distribution: Burma, Northern India and Nepal (Lyubarsky, 1999).

*Cryptophagus cellaris* (Scopoli, 1763)

INDIA. West Bengal, Darjeeling, Tigerhill, 2200-2500 m, 13.X.78, 1 ex (leg. C. Besuchet- I. Löbl); Uttar Pradesh, Garhwal, 1900 m, 21.X.79, 4 ex; 28.X.79, 1 ex; Uttar Pradesh, Kumaon, Chaubattia, 1950 m, 14.X.79, 3 ex; Uttar Pradesh, Kumaon, Rangarh, 2000 m, 9.X.79, 12 ex (leg. I. Löbl). NEPAL. Burlang Bhanjyang, 2600 m, 5.IV.81, 1 ex; Kosi, forest S. Mangsingma, 2200-2600 m, 11-13.IV.94, 1 ex (Leg. I. Löbl- A. Smetana).

Distribution: Cosmopolitan. These are the first records for India and Nepal.

*Cryptophagus heteroclitus* Lyubarsky, 1997

INDIA. Uttar Pradesh, Garhwal, 20.X.1979, 1 ex; 25.X.1979, 1 ex; 29.X.79, 1 ex; Kumaon, Bhim Tal, 1800 m, 9.X.79, 1 ex; Kumaon, Rangarh, 2400 m, 10.IX.79, 2 ex; 9.X.79, 7 ex; Kumaon, Chaubattia, 13.X.79, 3 ex (leg. I. Löbl); Meghalaya, Khasi Hills Shillong, 1850-1950 m, 25.X.78, 8 ex; 30.X.79, 1 ex; West Bengal, Darjeeling distr., 2200 m, 14.X.78, 1 ex; IX-X.78, 1 ex; West Bengal, Darjeeling distr., Tigerhill, 2200-2700 m, 13.X.78, 1 ex (leg. C. Besuchet- I. Löbl). NEPAL. Bagmati, Burlang, 2600 m., 5.IV.81, 6 ex; Bagmati prov., Chauvas, 2600 m, 4.IV.81, 4 ex; Bagmati, Dobate ridge, NE Barahbise, 2700-3000 m, 2.V.81, 2 ex; Bagmati, Gokana forest near Kathmandu, 1400 m, 3.III.81, 1 ex; Bagmati, Phulcoki, near Kathmandu, 1400 m, 1.IV.81, 2 ex; Bagmati prov., Pokhare, NE Barahbise, 3000 m, 3.V.81, 1 ex; 7.V.81, 2 ex; Kathmandu, Phulcoki, 2500 m, 28-29.IV.91, 47 ex; Kosi, pass NE Mangmaya, 2300 m, 6.IV.84, 3 ex; Kosi, ridge NE Mangmaya, 2800 m, 7.IV.84, 4 ex; Kosi prov., Chichila, above Ahale, 2200 m, 4.IV.84, 1 ex; Kosi, forest NE Kuwapani, 2350 m, 5.IV.84, 1 ex; 24.IV.84, 1 ex; Kosi prov., NE Mangmaya, 6.IV.84, 5 ex; Kosi, Val Induwa, 2000 m, 16.IV.84, 2 ex; Lalitpur, Phulcoki, 2500 m, 15.X.83, 3 ex; 16.X.83, 1 ex; NE Kuwapani, 2600 m, 15.IV.82, 2 ex; Phulcoki, 2600 m, 2.IV.82, 2 ex; 21.IV.82, 2 ex (leg. C. Besuchet- I. Löbl).

Distribution: Northern India and Nepal (Lyubarsky, 1999).

*Cryptophagus himalaicus* Bruce, 1952

INDIA. Uttar Pradesh, Kumaon, 2250 m, 9.X.79, 1 ex (leg. I. Löbl). NEPAL. Bagmati, below Thare Pati, 3300 m, 10.IV.81, 1 ex; Bagmati, Gul Bhanjyang, 2600 m, 6.IV.81, 3 ex (leg. A. Smetana- I. Löbl); Borges de Chobbar, 1300 m, 16.X.77, 2 ex (leg. L. Deharveng); Kathmandu, Phulcoki, 2400-2600 m, 28.IV.84, 1 ex; Kosi, ridge NE Mangmaya, 2800 m, 7.IV.84, 1 ex; Parbat, ridge E Ghoropani pass, 3100 m, 7.X.83, 1 ex (leg. A. Smetana- I. Löbl).

Distribution: Northern India and Nepal (Lyubarsky, 1999).

*Cryptophagus honoratus* Lyubarsky, 1999

INDIA. Garhwal, Mussoo river, 1700 m, 19.X.1979, 1 ex (leg. I. Löbl). NEPAL, Patan, Phulcoki, 2500 m, 28-29.IV.1984, 2 ex (leg. I. Löbl- A. Smetana).

Distribution: Nepal (LYUBARSKY, 1999). This is the first record from India.

*Cryptophagus malaisei* Bruce, 1945

Holotype (female): N.E. Burma, Kambaiti, 22.IV.1934 (coll. SMNH).

INDIA. West Bengal, Darjeeling distr., Ghoom-Lopchu 2000 m, 12.X.78, 3 ex; 13.X.78, 7 ex; 15.X.78, 1 ex; West Bengal, Darjeeling distr., Tigerhill, 2200-2300 m, 13.X.78, 3 ex. NEPAL. Bagmati, Gul Bhaanjang, 2600 m, 6.IV.81, 1 ex; Bagmati, Malemchi, 2800 m, 14.IV.81, 1 ex; Bagmati, Pokhara, NE Barahbise, 2800 m, 2.V.81, 1 ex; 2.VII.81, 1 ex; 3.V.81, 1 ex; Kathmandu distr., forest above Ahale, 2500 m, 10.V.81, 4 ex; Kathmandu distr., Phulcoki, 2600 m., 26.III.82, 1 ex; Khandbari, forest above Ahale, 2400 m, 26.III.82, 1 ex; Kosi prov., pass NE Mangmaya, 2300 m, 6.IV.84, 2 ex; Kosi, forest Mangsingma, 2300 m, 1-13.IV.84, 2 ex; 16.IV.81, 1 ex; Kosi prov., Val Induwa Kois, 2000-2600 m, 16.IV.84 (leg. I. Löbl-Smetana).

Distribution: Burma and Nepal (Lyubarsky, 1999). These are the first Indian records.

*Cryptophagus simulator* Grouvelle, 1916

Holotype ♀. India, Murree (coll. Grouvelle. MNHN).

INDIA. Garhwal distr., Musorie, 1700 m, 19.X.79, 1 ex; Kumaon distr., Chaubattia, 1950 m, 14.X.79, 1 ex; Kumaon distr., Rangarh, 2250 m, 9.X.79, 1 ex (leg. I. Löbl); Bagmati, Burlang Bhajyang, 2600 m, 5.IV.81, 1 ex; Bagmati, Gokana forest near Kathmandu, 1400 m, 31.III.81, 1 ex; Bagmati, Pokhara, 3000 m, 7.V.81, 1 ex (leg. I. Löbl- A. Smetana); Patan distr., Phulcoki, 2600 m, 21.IV.82, 2 ex; 22.IV.82, 2 ex; 28.IV.84, 11 ex; 28.V.84, 3 ex; Khandbari distr., forest NE Kwapani, 2600 m, 15.IV.82, 2 ex; Kosi, Chichila above Ahale, 2200 m, 4.IV.84, 1 ex (leg. A. Smetana); Kosi, forest S. Maagsingma, 2200 m, 11.IV.84, 1 ex; Patan, Phulcoki, 2700 m, 15.X.83, 2 ex; Manang distr., forest W. Bagarchap, 2200, 21.IX.83, 1 ex (leg. I. Löbl- A. Smetana).

Distribution: Northern India and Nepal (Lyubarsky, 1999).

*Cryptophagus reboredae* sp. n.

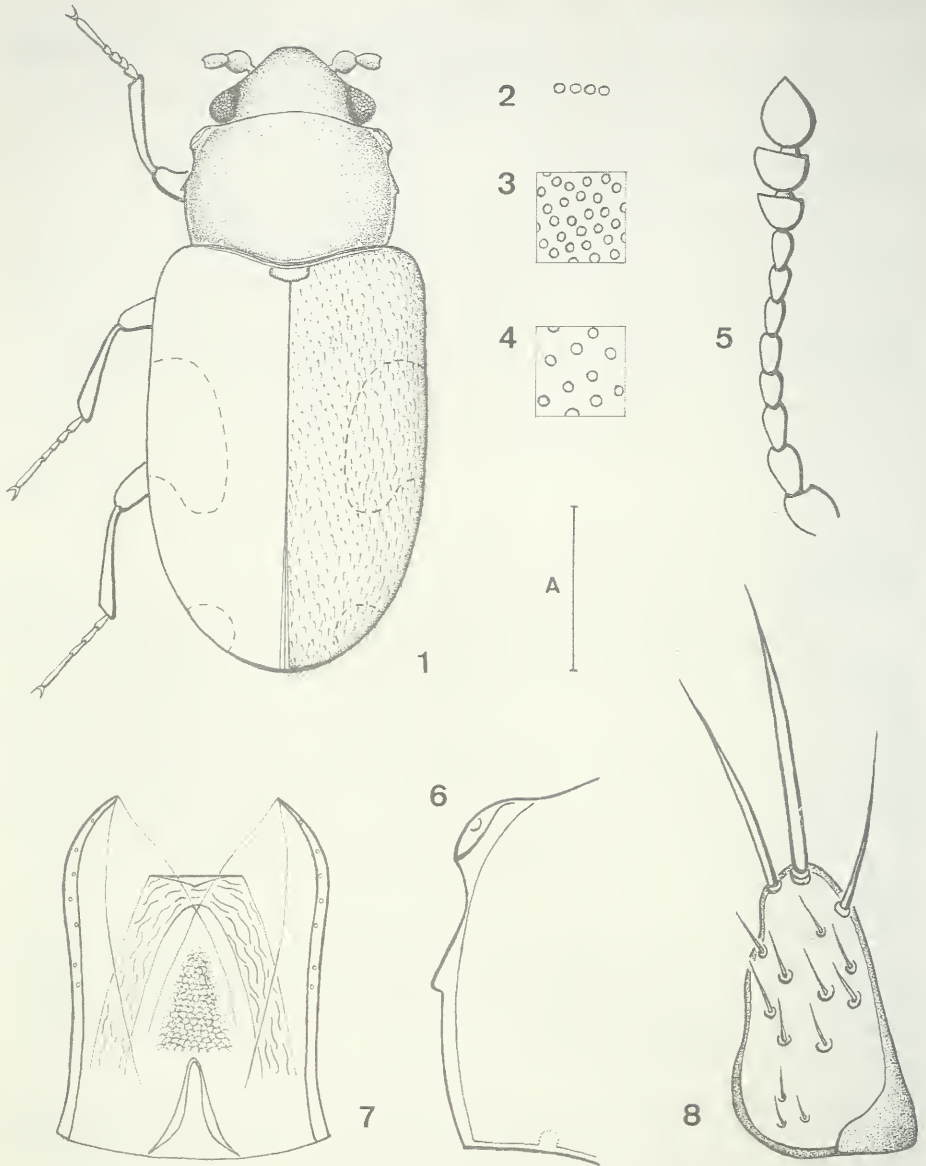
Figs 1 - 8

Type material: Holotype (male): Thailand, prov. Chiang Mai, Doi Inthanon, 2530 m, 16.II/18.IV.1987 (leg. P. Schwendinger) in coll. MHNG. Paratypes: 2 females, same date as Holotype (leg. P. Schwendinger) in coll. MHNG; 2 females, 17.XII.86/16.II.87, 2000 m (leg. P. Schwendinger) in coll. MHNG; 1 female, 9.I.81, 2500 m (leg. Deharveng-Gouze) in coll. J. C. Otero, University of Santiago de Compostela, Spain.

*Description.* Length 1.9 - 2.0 mm. Body oval, convex. Coloration yellowish brown, each elytron with a black spot and other smaller apical ones. Elytra with simple (decumbent) pubescence ( $L = 46,90 \mu\text{m}$ ). Metathoracic wings well developed.

Head transverse, 2.6 times as broad as long. Eyes ( $L = 0,250 \text{ mm}$ ) small, slightly prominent ( $E = 1,46$ ), with ocular facets larger ( $\emptyset = 11,52 \mu\text{m}$ ) than the punctures of head ( $\emptyset = 9,88 \mu\text{m}$ ) (Fig. 2). Antennae (Fig. 5) long ( $L = 0,680 \text{ mm}$ ) reaching beyond base of pronotum.

Pronotum transverse, 1.7 times as broad as long (Fig. 1, 6). Anterior callosities small (1/5 to 1/6 of length of pronotum); angle between the posterior edge of the callosity and the lateral margin of pronotum obtuse. Surface of the callosity scarcely



FIGS 1 - 8

*Cryptophagus reboredae* sp. n. 1: General view (A= 0,401 mm ). 2: Size and shape of ocular facets. 3-4: Comparison of puncturation between pronotum and elytra. 5: Antennae (A= 0,370 mm ). 6: Pronotum (A= 0,356 mm). 7-8: Dorsal view of aedeagus (A= 35,73  $\mu$ m) and paramere (A= 38,17  $\mu$ m).



visible in dorsal view, punctured at centre. Lateral tooth in middle of pronotal side. Lateral margin concave between callosity and lateral tooth, convex between lateral tooth and posterior angle. Pronotal puncturation pronounced; punctures separated by a puncture diameter ( $\emptyset = 13,16$  a  $13,52 \mu\text{m}$ ) or less (Fig. 3). Scutellum small, transverse.

Elytra oval, moderately convex; 3 times longer than pronotum. Elytral puncturation somewhat smaller and more dispersed than on pronotum ( $\emptyset = 13,16 \mu\text{m}$ ) (Fig. 4).

Aedeagus (Fig. 7) ( $L = 0,153 \text{ mm}$ ) with preputial sac and endophallic orifice visible. Parameres (Fig. 8) ( $L = 67,35 \mu\text{m}$ ) with two long apical setae ( $L = 60,86 - 64,68 \mu\text{m}$ ) and sparse, setae-bearing pores.

*Diagnosis.* This species belongs to the group characterised by having eyes small and conical, slightly prominent; wings fully developed and dorsum bicolored. *C. reboredae* can be distinguished from other members of this group (*C. anxiosus* Grouvelle and *C. heteroclitus* Lyubarsky) by the structure of the pronotum, antennae, aedeagus and parameres.

*Etymology.* This species is named in honour of Dra Patricia Reboreda.

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